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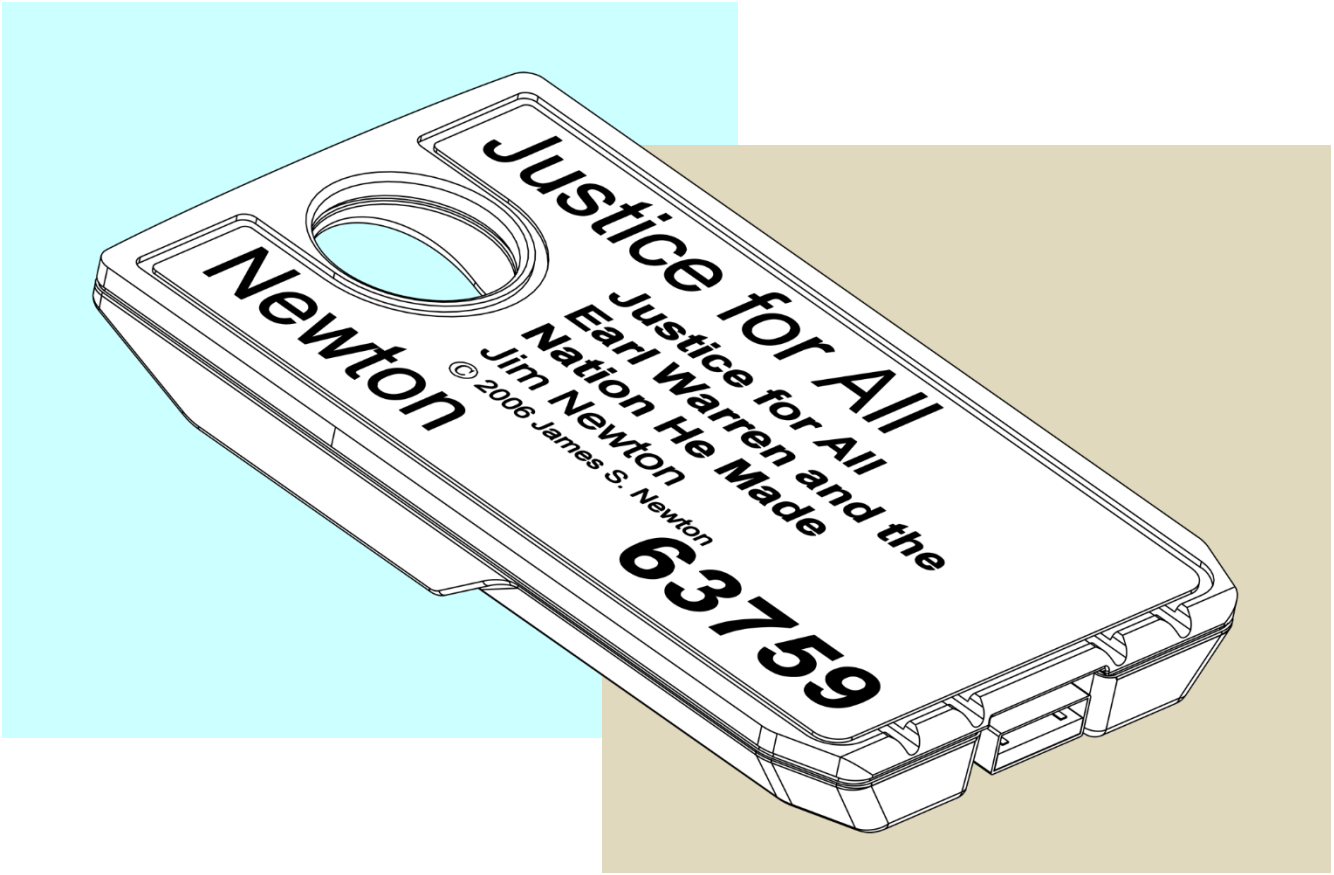
Document QA201801

Instructions for Applying Navigation Markers



Version 2.0, December 2018

	Issue	Date	Change Description
Revision History	Rev. 1.0	Jun/20/2005	First Release
	Rev 2.0	Dec/28/2018	Added requirements for resource files Added recommendations for navTargets and segments Edited layout to align with current NLS documents Assigned NLS Document number

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1. Scope

This document outlines general principles that shall be used in determining how to properly build the accessibility with navigation markers in a digital talking book (DTB). All navigation found in a DTB shall be derived from the style and layout found in the source material. Final authority regarding proper use of navigation markers rests with the NLS Quality Assurance Section.

2. Reference Documents

The following documents and publications provide further information for creating DTBs for NLS.

2.1 Specifications

American National Standards Institute (ANSI)

ANSI/NISO Z39.86-2002
Specifications for the Digital Talking Book

The document cited above is available from:

American National Standards Institute, Inc.
25 West 43rd St., 4th Floor
New York, NY 10036
Tel: (212) 642-4900
Fax: (212) 398-0023
www.niso.org/workrooms/daisy/Z39-86-2002.html

National Library Service for the Blind and Physically Handicapped

NLS Specification 1201
Narration

NLS Specification 1202
Digital Talking-Book Mastering

NLS Specification 1203
Digital Talking-Book Construction

NLS Specification 1208
Preparation of Audio Files from Commercial Audiobooks

The documents cited above are available from:

National Library Service for the Blind and Physically Handicapped
Library of Congress
1291 Taylor St. NW
Washington, DC 20542-0002
Tel: (202) 707-5100
Fax: (202) 707-0712
www.loc.gov/nls/specs/

3. Requirements

Any questions regarding specific titles shall be addressed to the NLS contract monitor. If action not covered by these guidelines is required for a specific title, NLS will supply a written explanation of the directive action to be taken. Submit a copy of any NLS-supplied written directions with the applicable book when it is submitted to NLS Quality Assurance Section for approval.

3.1. Main Content Navigation (navPoints)

The structure of the main content of the source material shall be the basis of the primary navigation of the DTB, the hierarchical navPoints. A review of the full text of the source material should be conducted in order to determine which items are to be hierarchical navPoints. The table of contents alone shall not be the basis because some materials may have items for navigation markers not listed in the table of contents. For example, some books may contain small portions of a chapter that are clear divisions—often such divisions are offset from the chapter with a textual heading but are not listed in the table of contents. These divisions shall be made navigable.

Navigation includes items that readers will likely wish to be able to jump to before reaching them in the process of a linear reading of the source material, or will likely wish to return to at a later time. Include items when the extra navigation they provide will enhance readers' comprehension and increase usability of the DTB.

Do not omit navigation for a set of items simply because those items are of short duration
Do not mark items as part of the hierarchical structure of the DTB, if to do so would require a major increase in effort and the benefit to the user would not be commensurate with that effort; that is, readers would not be likely to utilize the extra navigation ability. For example, a book such as *Robert's Rules of Order* will certainly need to be marked up to as deep a level as required to permit navigation through the full structure of the book. On the other hand, a novel with many small "headingless" sections within each chapter might not benefit much from the inclusion of navigation to that level. Judgment shall be made based on the contents of the book: does the portion have a heading; is it helpful to navigate to; would such markup be too complex?

3.1.1. Style and Layout

At a minimum, all DTBs shall contain two navPoints at level one (the topmost level of the NCX hierarchical structure) allowing navigation to 1) the opening announcements and 2) the closing announcements.

The first navPoint of every DTB shall mark the narration of the title and author from the DTB opening announcement. The class attribute for this navPoint shall be "title/author" as found in column 3 of the table in Appendix A of NLS specification 1203.

Do mark preliminary items that are commonly found at the beginning of a book prior to the main content, such as the Library of Congress annotation, "From the Book Jacket," "About the Author," "Other books by," the table of contents, acknowledgements, etc.

The last navPoint of every DTB shall mark the first lines of the narration of the closing announcement (i.e., end of title by author). The class attribute for this navPoint shall be "close" as found in column 3 of the table in Appendix A of NLS specification 1203.

Additional level one navPoints shall be placed to allow navigation to other major portions of the source material, as needed, following the general philosophy outlined above. For example, a navPoint shall be placed at the beginning of the body of the book, if the book has no major divisions, or at each major division such as an introduction, prologue, chapter, article, etc., if present in the source material.

Level two and subsequent levels shall be included when needed following the general philosophy outlined above. For example, if the chapters contain divisions with clearly defined headings--each of which contain numerous sub-divisions that are not indicated with clear headings, mark the

divisions with headings at level two and ignore the numerous sub-divisions. Again, base this on the main content of the source material.

3.1.2. navLabel Content

The content of the navLabel text and audio elements shall match as closely as possible the heading found in the source material. The content of the audio element shall not consist of the entire narration of the division, only the identifying navigable heading. When marking recorded narration without source material, the text element shall match the content of audio element.

3.2. Other Navigation

In addition to navPoints marking the main content of the source material, a DTB may contain non-hierarchical navigation items that can enhance the user experience: navTargets and Special SMIL Elements. A navTarget is part of a list of items of similar type and has a navigation label, whereas a Special SMIL Element does not. A navTarget is a short clip of audio; a Special SMIL Element can initiate playback of any amount of audio. Each has its own functionality and accessibility in the various DTB players.

3.2.1. Note References and Note Content (navTargets and Special SMIL Elements)

A note is defined in section 3.2.3 of NLS Specification 1201 (current version). This category of structures includes footnotes and endnotes (notes collected at the end of each chapter or at the end of the book). The narration of the note reference and the narration of the note itself are marked distinctly. The navLabel of the navTarget shall only contain the note reference itself, not the content of the note. The audio element of the SMIL element shall contain the content of the note, not the reference. Note references shall be marked with a navTarget as specified in section 3.1.4.4 of NLS Specification 1203. The content of the note shall be marked with a SMIL element as specified in section 3.1.3.6.2 of NLS Specification 1203.

3.2.2. Page Numbers (navTargets)

Page numbers may be made navigable when their presence is essential to the efficient use of the book. For example, they should be marked in cookbooks where recipes are accessed via page numbers. The audio element of the navTarget shall only contain the narration of the page number itself, not the content of the page. Page numbers shall be marked with a navTarget as specified in section 3.1.4.4 of NLS Specification 1203.

3.2.3. Line Numbers (navTargets)

When line numbers are present in a book, each printed number should be marked in the DTB. The audio element of the navTarget shall only contain the narration of the line number itself, not the content of the line number. Line numbers shall be marked with a navTarget as specified in section 3.1.4.4 of NLS Specification 1203.

3.2.4. Segments (Special SMIL Elements)

Segments are generic portions of text that are not included in the hierarchy of the book and do not normally have headings. They can be photo captions, glossary entries, bibliography entries, list items, lines, paragraphs, table rows, stanzas, etc. Portions of a book shall be divided into segments when the ability to step forward or backward through the items is essential or highly useful to a reader. If the source material contains the following divisions, the DTB shall contain segments for each entry within the division:

A glossary

A bibliography

An ordered (numeric or alphabetical) list

List of instructions

When marking a DTB with segments, mark each entry in the division as a segment. In addition, if the narration following the segments is not already marked in some way for navigation, mark it as a segment as well. For example, if a list of ten items is followed by an unmarked paragraph, mark the start of the paragraph with a segment as well. If a glossary is followed immediately by a new chapter, however, the chapter heading will be marked as a navPoint and shall not be marked with segment. All segmented items shall be marked with a SMIL element as specified in section 3.1.3.6.1 of NLS Specification 1203.

3.2.5. Reader's Notes (Special SMIL Elements)

A reader's note is defined in section 3.2 of NLS Specification 1201 (current version). Any reader's note added to the DTB shall be marked. The reader's note reference (heading) and content of the reader's note shall be marked with a single SMIL element as specified in section 3.1.3.6.3 of NLS Specification 1203.

3.2.6. Sidebars (Special SMIL Elements)

Sidebars contain information supplementary to the main text and/or narrative flow. They are usually printed apart from the main text block on a page and are often boxed. A sidebar shall be read as close as practical to the text it supplements. The sidebar reference (heading) and content of a sidebar shall be marked with a single SMIL element as specified in section 3.1.3.6.4 of NLS specification 1203. When a sidebar contains within it an ordered list, mark only the sidebar reference with the sidebar SMIL element. Mark the ordered list with segments following the principles in section 3.2.4 above.

3.3. Resource files for Alternative Class Attributes

Resource files may be used when the source material has navigable sections that require a class attribute other that those listed in appendix A of NLS Specification 1203. After an evaluation of the source material, following the guidelines above, if it is determined that the structure of the source material requires a class attribute not listed in appendix A, resource files may be used to augment the navigation with a new class attribute. Final authority regarding proper use of navigation markers rests with the NLS Quality Assurance Section. Resource files must conform to the normative requirements of section 10 of ANSI/NISO Z39.86-2002. The DTB and the resource files included in that DTB shall conform to the following requirements.

3.3.1. OPF

The resource.res, resourceaudio.3gp, and resource110.dtd files shall be listed in the OPF manifest as specified in section 3.3 of ANSI/NISO Z39.86-2002.

3.3.2. NCX

The class attribute of the NCX navPoints that require a new class attribute shall match the name of the new class attribute as contained in the classRef attribute of the resource.res file.

3.3.3. resource.res

The resource.res file shall include the following DTD:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE resources PUBLIC "-//NISO//DTD resource v1.1.0//EN" "resource110.dtd">
```

The resource.res file shall include the following elements:

```
<resources version="1.1.0">
        <resource type="ncx" elementRef="navPoint" classRef="XXXX" lang="en">
                <text>XXXX</text>
                <audio src="resourceaudio.3gp" clipBegin="TIME" clipEnd="TIME"/>
```

```
        </resource>
</resources>
```

The attribute classRef of the resource element shall contain the name of the new class attribute. The name of the new class attribute shall be a single word.

The text element of the resource element shall contain the name of the new class attribute.

The audio element src attribute of the resource element shall point to the resourceaudio.3gp file that contains the narration of the new class attribute. The clipBegin time for each audio clip shall be between 100 and 200 ms before the beginning of narration of the new class attribute. The clipEnd time for each audio fragment shall be placed between 150 to 500 ms following the end of the narration of the new class attribute (see section 3.1.2.5 of NLS Specification 1203).

One resource.res file shall be used for all new class attributes. The resource element and its child elements shall be repeated as necessary for each new class attribute.

3.3.4. resourceaudio.3gp

The resourceaudio.3gp file shall include the narration of the new class attribute. The narration shall be the word or phrase that best describes the division that is being made navigable (e.g., sonnet or reading guide).

One resourceaudio.3gp file shall be used for the narration of all new class attributes.

3.3.5. Resource110.dtd

The resource110.dtd file shall include the entire DTD as found in appendix 5 of ANSI/NISO Z39.86-2002.